

September 1, 2011

Maria Renninger
[REDACTED]

RE: Proposal to site elementary school at John Marshall School, Seattle School District

Dear Ms. Renninger,

You have asked about the potential health impacts to children associated with the Seattle School District's proposal to locate an elementary school next to a high traffic corridor. The John Marshall School, a school building which is currently used for other purposes, is located next to Interstate Highway 5, and the school playground is positioned between the school and the highway. Locating a school next to a high traffic corridor raises public health concerns due to the exposure to the vehicle emissions during the school day.

As an academic pediatrician, environmental medicine specialist, air pollution researcher, and Director of the University of Washington based Pediatric Environmental Health Specialty Unit, I am well aware of the known impacts of poor air quality on child health. Increasingly, studies have demonstrated that vehicle related air pollutants and the associated adverse health effects in children are highly concentrated near heavily traveled roadways. This proposal appears contrary to the emerging public health evidence regarding vehicle emissions and child health.

Compared to adults, children are more vulnerable to air pollution due to their higher breathing rate and ongoing lung development and growth. Air pollution exposure based on proximity to busy roads has been associated with respiratory symptoms (Kim, 2008; Brauer, 2007; Kim, 2004; McConnell, 2006; Gauderman, 2000, 2002, 2004, 2005; Janssen, 2003; Venn, 2000; Ciccone, 1998; van Vliet, 1997), asthma hospitalizations (Chang, 2009; Lin, 2002; Norris, 1999), poorly controlled asthma (Huynh, 2010), increased medical visits (English, 1999), asthma diagnosis (Gordian, 2006, Gauderman, 2005) and decreased lung function in children (Gauderman, 2002, 2004; Brunekreef, 1997). The recently completed Children's Health Study, a ten year study conducted by the USC School of Medicine, found strong evidence that exposure to pollutants related to vehicle emissions such as nitrogen dioxide and elemental carbon (or soot) are linked to a slowing of lung function growth (Gauderman, 2004, Gauderman, 2002, Gauderman, 2000). The researchers concluded that the resulting deficits in lung function are likely permanent, and may increase the risk for respiratory and other diseases later in life. The study also found that the children in the study that lived the nearest to roadways with heavy traffic, such as freeways, showed increased risk for having asthma, as did Gordian's 2006 study.

Given the evidence published in peer-reviewed journals, limiting children's exposure to vehicle emissions should be a priority consideration.



Catherine Karr, MD PhD MS
University of Washington
Pediatric Environmental Health Specialty Unit
Seattle WA

CC: Kay Smith-Blum, Seattle School Board; kay.smith-blum@seattleschools.org

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